Conclusion: Although BMI has been reported to be correlated to baroreceptor sensibility, it doesn't seem to influence HRV and HRT parameters in hypertensive patients. The interpretation of HRV and HRT in hypertension doesn't need adjustment to BMI.

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Assessment of the effect of antihypertension treatment on heart rate variability in hypertensive patients

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Introduction: Heart rate variability (HRV) abnormalities have been suggested to be associated with higher risk of occurrence of cardio-vascular events. Several studies noticed HRV abnormalities in systemic hypertension.

Aim: The aim of this prospective study is to evaluate the effect of antihypertensive treatment on temporal and spectral parameters of heart rate variability.

Methods: This study included 85 patients (mean age 57±11 years and sex ratio 0.88) followed up for hypertension. They underwent 24 hours Holter recording and 24 hours ambulatory blood pressure monitoring (ABPM). Thirty nine patients (45%) received diuretics, 49 patients (57%) were on ACE or ARB, 42 patients (49%) were on B blockers, 39 patients (45%) received calcium channel inhibitors and 8 patients (9%) were on central antihypertensive treatment. Patients in different therapeutic groups were similar regarding demographic characteristics and arterial systolic and diastolic pressure

Results: There was no significant difference in HRV parameters between patients receiving ACE/ARB, those on calcium channel blockers, on diuretics and patients receiving central antihypertensive treatment. We noticed that HRV parameters tended to be more altered in patients receiving B blockers.

Conclusion: In our study most classes of antihypertension treatment don't affect the HRV parameters. The effect of B blockers is contreversial. Their deleterious effect on HRV must be verified by larger studies.

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Impact of obesity and hypercholesterolemia on cardiac remodelling in patients with cardiovascular diseases

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Objectives: to investigate relations between obesity, plasma cholesterol level and structural changes of the heart in patients with combined ischemic heart disease (IHD) and arterial hypertension (AH).

Material and methods: 35 patients (24 males and 11 females) with long-standing IHD and AH were enrolled in the study. The average age of patients was 54,2+8,1 years. All patients underwent routine clinical examinations including anthropometry, office blood pressure (BP) measurement, echocardiography and measurement of fasting total cholesterol (TC) in plasma. Left ventricular myocardial mass (LVMM) was calculated by Penn Convention formula. Indexation of LVMM was made by height in 2.7 power. Left atrium diameter (LAD) was measured in anterior-posterior direction. All patients received conventional anti-ischemic and anti-hypertensive treatment regularly.

Results: Any significant correlations between BP in treated patients and characteristics of cardiac remodeling were not found. Meanwhile, average BP correlated significantly with BMI (r=0.51, p=0.002) and TC (r=0.59, p<0.001). Moreover, increased BMI wasn't associated with specific changes in the heart structure except LAD (r=0.61, p<0.001), and LAD itself correlated positively with LVMM index$^{2.7}$ (r=0.72, p<0.001) and negatively with ejection fraction of LV (r=–0.49, p=0.003). Interestingly, that age of patients correlated only with diameter of ascending aorta (r=0.46, p=0.06) which increasing is probably associated with pronounced atherosclerosis. Sex of patients had impact on few values. Compare to females in this study males had higher height (173.7+4.3 vs. 167.0+4.4 cm, p<0.001) and diameter of ascending aorta (35.1+4.9 vs. 31.4+4.1 cm).

Conclusion: AH is more resistant for conventional treatment if associated with obesity and hypercholesterolemia. Increasing of BMI is related to specific type of cardiac remodeling – namely – enlargement of left atrium (known marker of pronounced diastolic dysfunction). Large left atrium is often combined with LV hypertrophy and systolic dysfunction. Finally, diameter of ascending aorta is more likely increased in males and in elderly age.

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The prognostic value of ankle-brachial blood pressure index at hypertensive patients with or without metabolic syndrome

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The aim of the study was to estimate how the ankle-brahial blood pressure index (ABPI) correlates with cardiovascular events at hypertensive patients (pts) with or without metabolic syndrome (MS).

Methods: 40 hypertensive pts(mean age =57.1+/–7.5 years, 52.5% males) – group 1 and 40 hypertensive pts with MS, matched for age and sex(mean age =58.7+/–7.2 years, 55% males) – group 2. ABPI was evaluated using ultrasound assessment of blood flow in posterior tibial artery and brachial artery. ABPI smaller than 1 was considered abnormal. All pts were evaluated during one year in order to detect the following complications: unstable angina(UA),non-ST-segment elevation myocardial infarction(NSTEMI), transient ischemic stroke(TIS),ischemic stroke(IS).

Results: In group 1, 17 pts(42.5%) had reduced ABPI:0.62+/–0.24. In group 2, 19 pts (47.5%) had reduced ABPI:0.54+/–0.16. The difference is not significantly statistic between the two groups(p=0.12). In group1,UA was significantly associated with reduced ABPI(0.64+/–0.26 vs 0.91+/–0.18, p=0.04).In the same group,TIS was found in a significantly higher proportion at pts with reduced ABPI(0.61+/–0.12 vs 1.02+/0.14, p=0.001). In group 2,UA was also significantly associated with reduced ABPI (0.56 +/–0.11 vs 0.88+/–0.14, p=0.02). NSTEMI was significantly more frequent at pts with reduced ABPI(0.52+/–0.12 vs 0.93+/–0.16, p=0.002). In the same group, TIS was found in a significantly higher proportion at pts with reduced ABPI (0.58+/–0.14 vs 0.96+/–0.12, p=0.03).

Conclusions: Hypertensive pts with MS have reduced ABPI in a higher but not significant proportion than hypertensive pts without MS. Reduced ABPI seems to predict a worse mid term outcome (one year) concerning cardiovascular events at hypertensive pts, especially with MS. Moreover, reduced ABPI appears to have more powerful mid term prognostic value for incidence of acute coronary syndrome without ST-segment elevation at hypertensive pts with MS.

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Abnormal circulating levels of metalloproteinase and their inhibitor in hypertensive patients

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The aim of this study was to determine the plasma levels of Matrix metalloproteinases (MMPs): MMP-2, MMP-3, MMP-9, and their inhibitors (TIMPs):TIMP-1, and TIMP-2 in hypertensive patients and healthy subjects. The study has involved 40 hypertensive patients and 41 adult healthy controls. The mean plasma activity of pro-MMP9 in the hypertensive group and the control group were significantly different (15.33±12.93 vs 90.38±97.49 103 densitometric units/ul; p<0.05). The